

The background of the slide features a dense field of golden wheat stalks, slightly out of focus, creating a textured, natural backdrop for the text.

A növénytermesztés környezeti fenntarthatósága Magyarországon

Environmental Sustainability of Crop Production in Hungary

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AKI-NAK-FAO REU Konferencia, Budapest, 2017. május 9.

Környezeti fenntarthatóság fogalma

Concept of environmental sustainability

Természeti erőforrások megőrzése (Goodland, 1995)

Maintenance of natural capital (Goodland, 1995)



Biodiverzitás gondozása

Biodiversity management

Kibocsátások

Emissions

Szén-dioxid-gazdálkodás

Carbon management

Engedélyek és jogosítványok

Permits & licences

Megfelelés

Compliance



Példa

REDcert-EU "System principles for biomass production for the food industry"; chapter...	REDcert ²	Reference to the respective law
3.1 Land with high biodiversity value (Art. 17 (3) of the RED)	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Article 17 (3) of Directive 2009/28/EC
3.2 Land with high above-ground or underground carbon stock (Article 17 (4) of the RED)	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Article 17 (4) a), b) and c) of Directive 2009/28/EC
3.3 Land that was peatland in January 2008 (Art. 17 (5) of the RED)	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Article 17 (5) of Directive 2009/28/EC
3.4 Requirements for biofuels/bioliquids made from waste and residues	■	Article 17 (1) of Directive 2009/28/EC
3.5 Environmentally responsible biomass production	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	List I and II of Directive 80/68/EEC
3.5.1 Groundwater protection	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	
3.5.2 Fertiliser use	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Directive 91/676/EEC
3.5.3 Use of sludge	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Article 2 of Directive 86/278/EEC
3.5.4 Handling and use of pesticides	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Directive 2009/128/EC
3.5.5 Integrated plant protection	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Directive 2009/128/EC

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Example



3.5.6 Soil erosion p...	ciples for the production of biomass, bioliquids and biofuels; 3.5.12 Use of plant protection agents must also be complied with) ✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Regulation (EC) No. 73/2009
3.5.7 Preservation of soil structure and soil fertility	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels; 3.5.13 Soil management must also be complied with)	Regulation (EC) No. 73/2009
3.5.8 Water protection and management	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels; 3.5.10 Irrigation management must also be complied with)	Directive 2000/60/EC
3.5.9 Social responsibility	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels; see also 3.5.9 Social responsibility for this document)	International Labour Organization (ILO)
✓ ■ ✓ ■ ■	3.5.10 Irrigation management 3.5.11 Use of seeds/planting stock 3.5.12 Use of plant protection agents 3.5.13 Soil management 3.5.14 GHG-oriented resource and energy use (energy efficiency) 3.5.15 Waste management 3.5.16 Farm management	Directive 2000/60/EC Regulation (EC) No. 178/2002 Directive 2009/128/EC Regulation (EC) No. 73/2009 Directive 2009/28/EC and Regulation (EC) No. 1305/2013 Directive 2008/98/EC Regulation (EC) No. 1307/2013
3.6. Cut-off date	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Directive 2009/28/EC
3.7 Documentation requirements	✓ (see REDcert-EU system principles for the production of biomass, bioliquids and biofuels)	Directive 2009/28/EC

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Fenntartható intenzifikáció – Paradoxon?

Sustainable intensification – A paradox?



2011-2015 átlaga /average

N	P	K	Y	CO ₂
149 kg/ha	79kg/ha	49 kg/ha	9.84 t/ha	229 kg/t
91 kg/ha	48 kg/ha	30 kg/ha	6.05 t/ha	270 kg/t

BIOGRACE II
Harmonised Greenhouse Gas Calculations
for Electricity, Heating and Cooling from Biomass

2011-2015 átlaga /average

N	P	K	Y	CO ₂
96 kg/ha	19 kg/ha	23 kg/ha	6.05 t/ha	273 kg/t

BIOGRACE II
Harmonised Greenhouse Gas Calculations
for Electricity, Heating and Cooling from Biomass



Forrás: LfL és tesztüzemi adatok alapján az AKI Agrárközgazdasági Kutatások Osztályán készült számítások

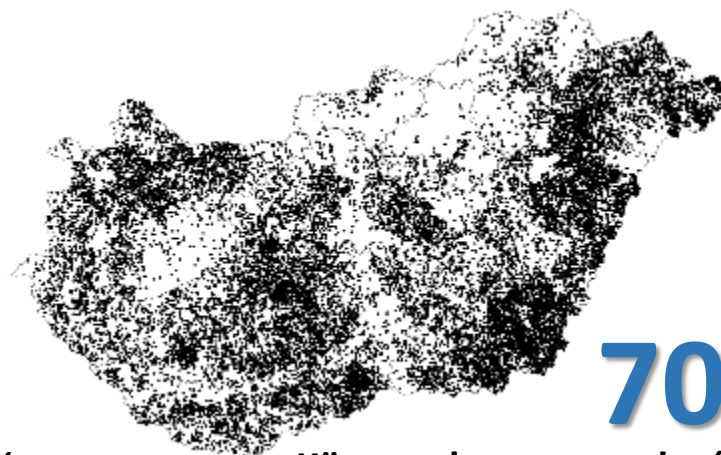
Kukoricatermelés hozamkategóriák szerint (2014)

Maize yields in Hungary, 2014



7%

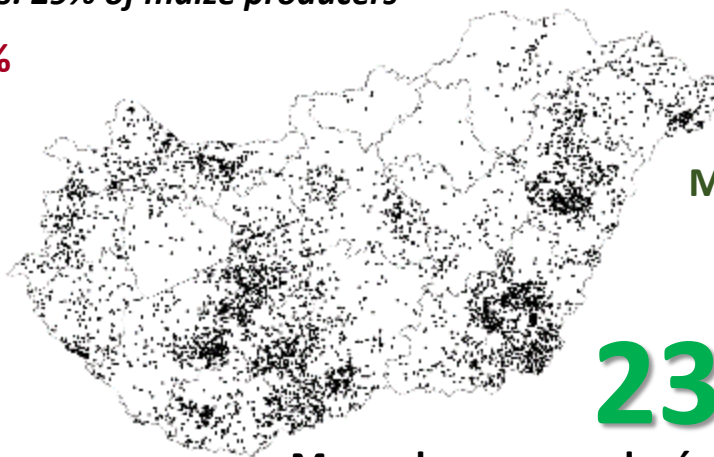
Alacsony hozam: gazdaságok 29%-a
Low yields: 29% of maize producers



70%

Közepes hozam: gazdaságok 61%-a
Mid-yields: 61% of maize producers

Alacsony hozam \geq EU átlag -30%
High yield \geq EU average -30%
(5.64 t/ha)



23%

Magas hozam: gazdaságok 10%-a
High yields: 10% of maize producers

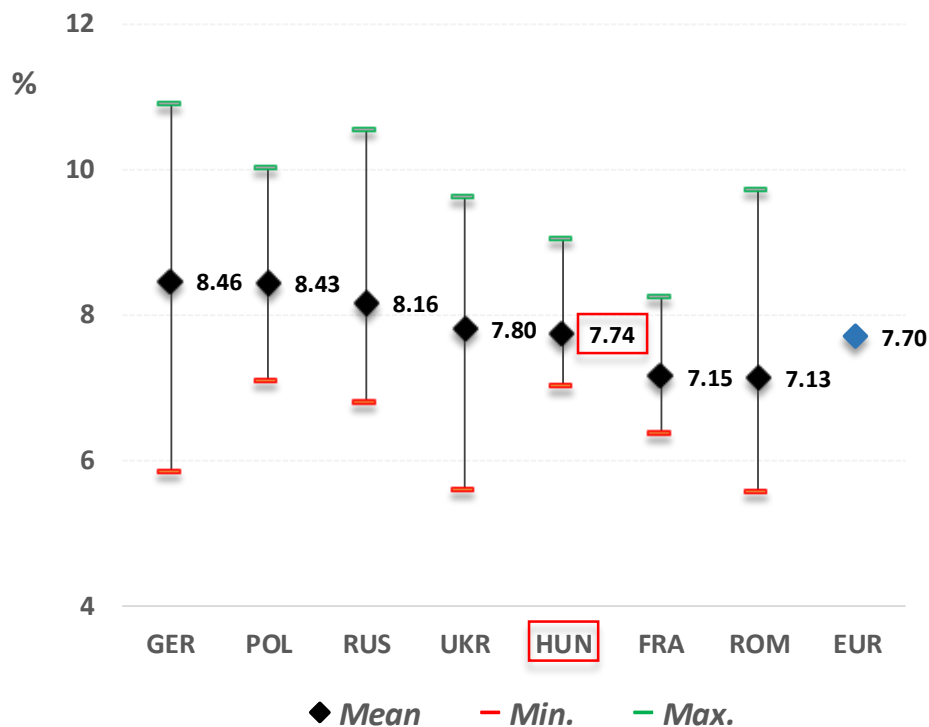
Magas hozam \geq EU átlag +30%
High yield \geq EU average +30%
(10.47 t/ha)

Forrás: MVH adatok alapján AKI szerkesztés

Kukorica beltartalmi paramétereit (2015)

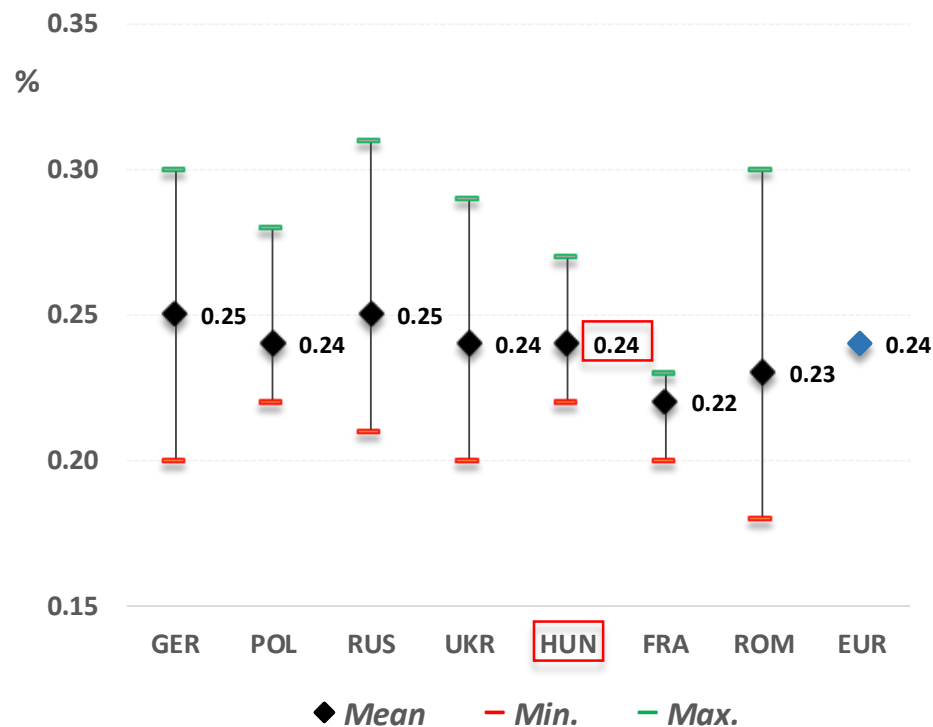
Nutritional value of maize, 2015

Nyersfehérje-tartalom néhány országban Crude protein content in selected countries



keveréktakarmány-gyártók által felvásárolt tételekből
from lots purchased by compound feed producers

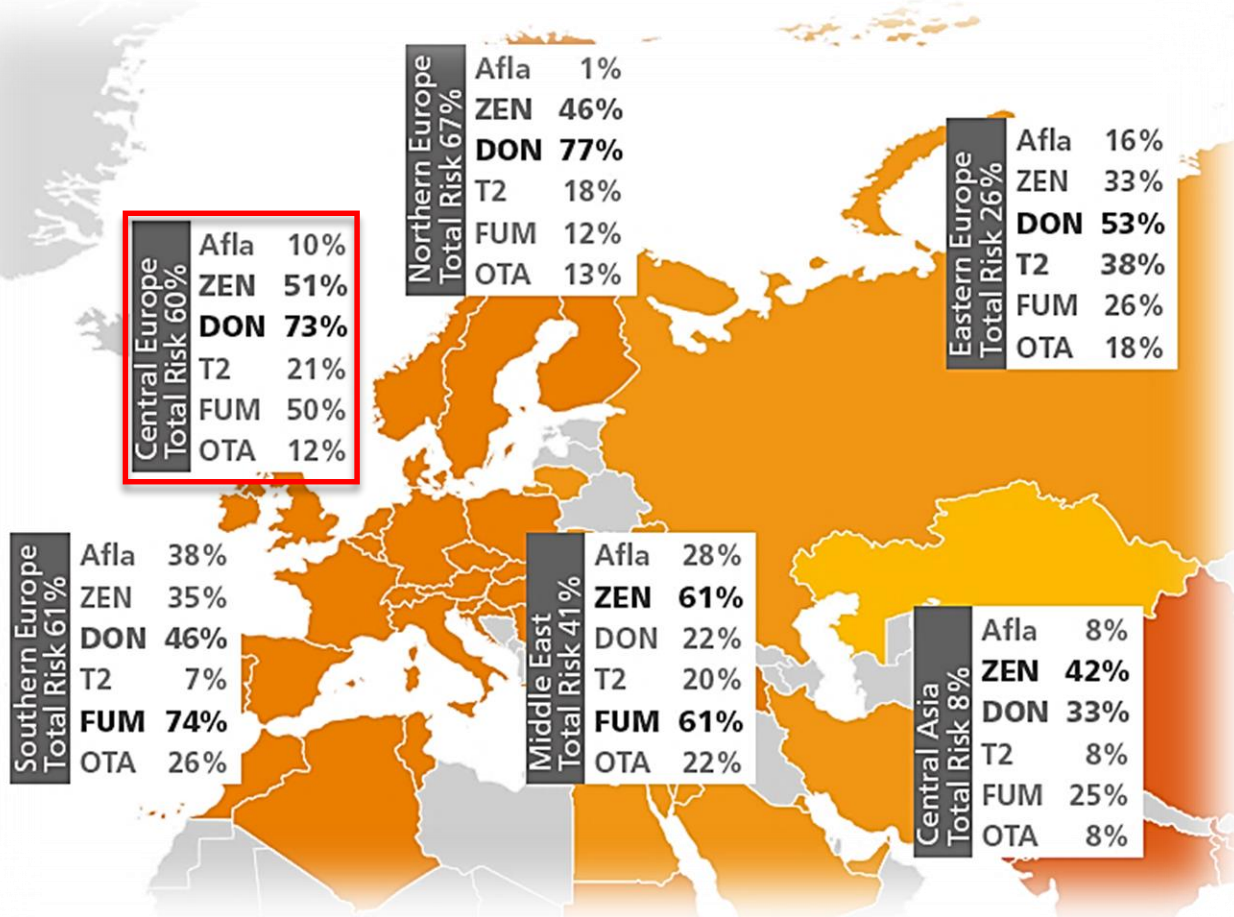
Lizintartalom néhány országban Lysine content in selected countries



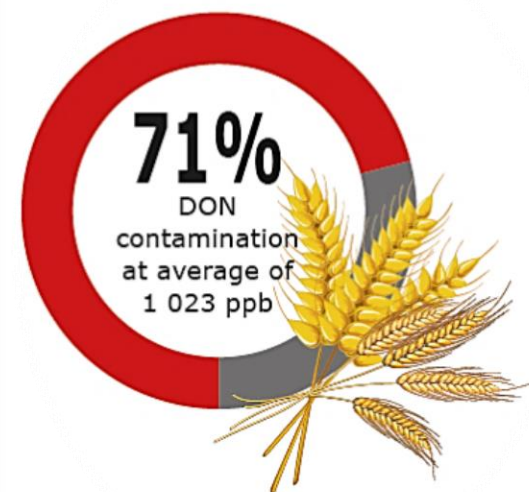
stabil és homogén kínálat...?
stable and homogenous supply...?

Gabonafélék mikotoxin-kockázati térképe (2016)

Mycotoxin risk map for cereals, 2016



Europe



Legend

- Moderate risk: 0-25% of samples above risk threshold
- High risk: 26-50% of samples above risk threshold
- Severe risk: 51-75% of samples above risk threshold
- Extreme risk: 76-100% of samples above risk threshold
- No samples tested

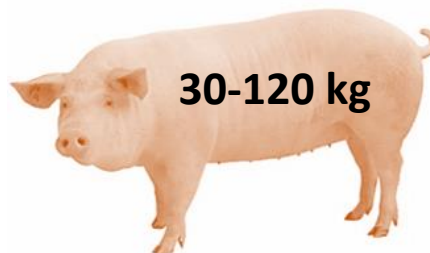


Standardizált takarmányhasznosulás

Standardized FCR



2013	2014	2015
2.80 kg/kg	2.80 kg/kg	2.78 kg/kg



2013	2014	2015
3.38 kg/kg	3.29 kg/kg	3.10 kg/kg



2013	2014	2015
2.94 kg/kg	2.89 kg/kg	2.84 kg/kg



2013	2014	2015
2.64 kg/kg	2.62 kg/kg	2.62 kg/kg



2013	2014	2015
2.90 kg/kg	2.91 kg/kg	2.86 kg/kg

Forrás: InterPIG és tesztüzemi adatok alapján az AKI Ágazati Költség- és jövedeleminformációs Osztályán készült számítások (1000 sertésnél többet hizlító gazdaságok)

Piacok fejlődése

Evolution of markets

Feltörekvő piac
Emerging market



Kínálati korlát
Supply constraint



Érett piac

Mature market



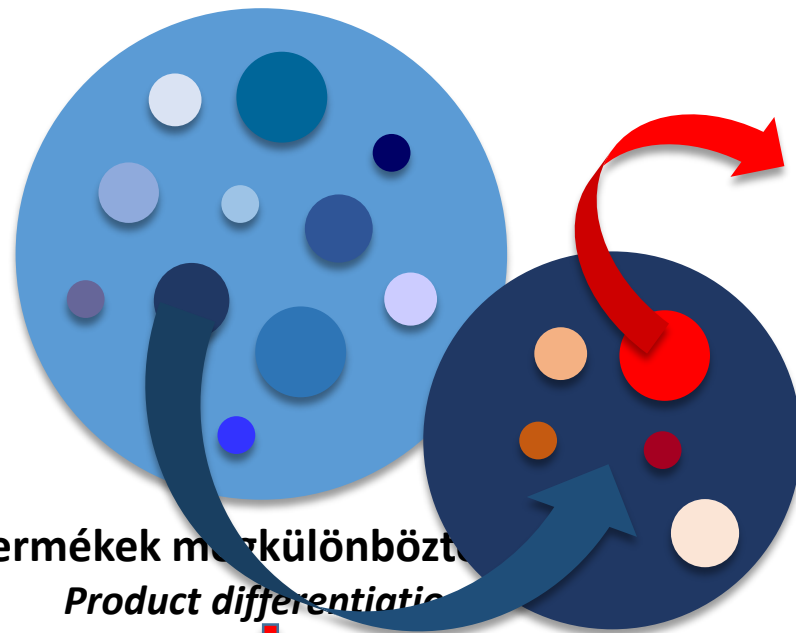
Keresleti korlát
Demand constraint



Elsődleges szempont a volumen
Volume is of primary importance



Versenytársak
Competitors



Termékek megkülönböztetése
Product differentiation



Réspiaci lehetőségek
Niche market opportunities

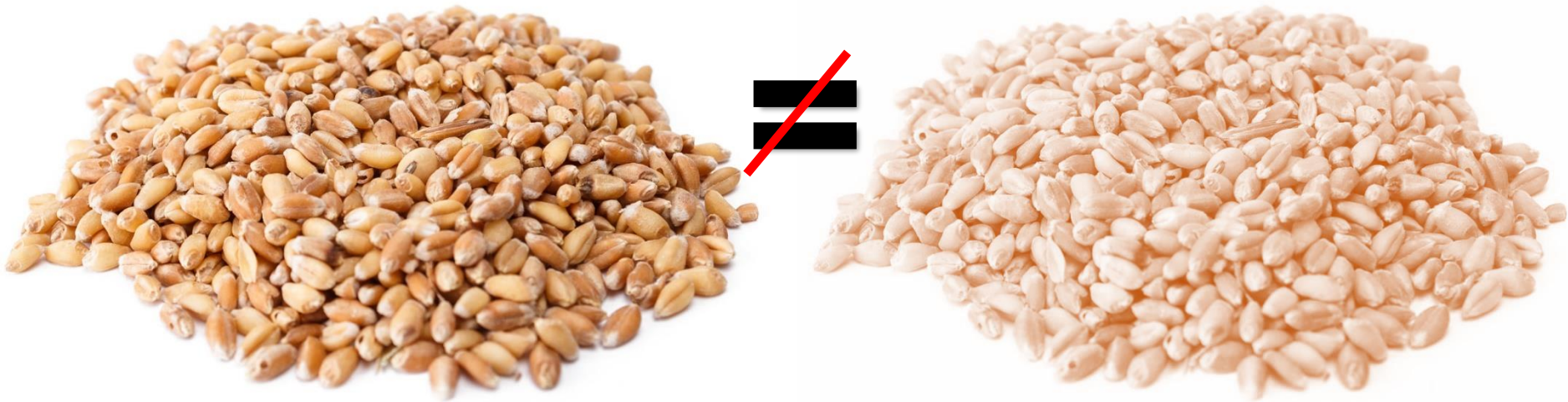


Innováció
Innovation



Ömlesztett (...?) áru

Bulk (...?) commodities



IP



a

IP



b

IP



c

IP

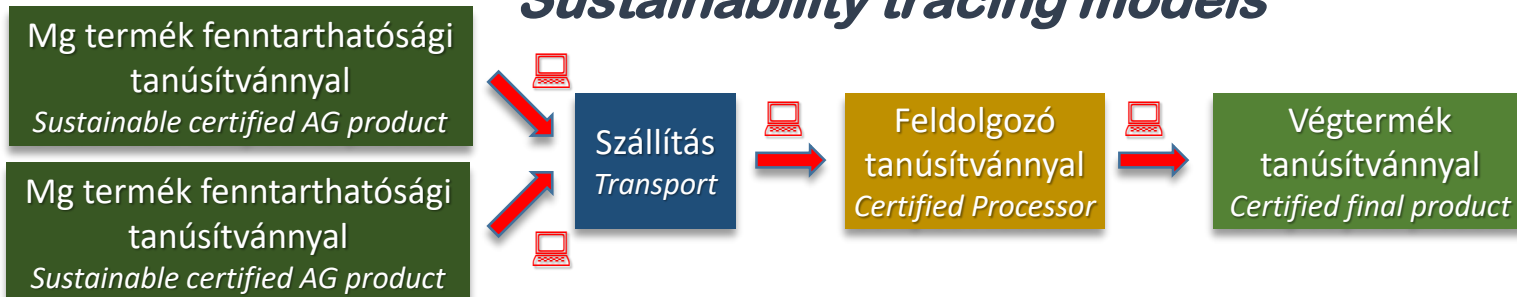


d

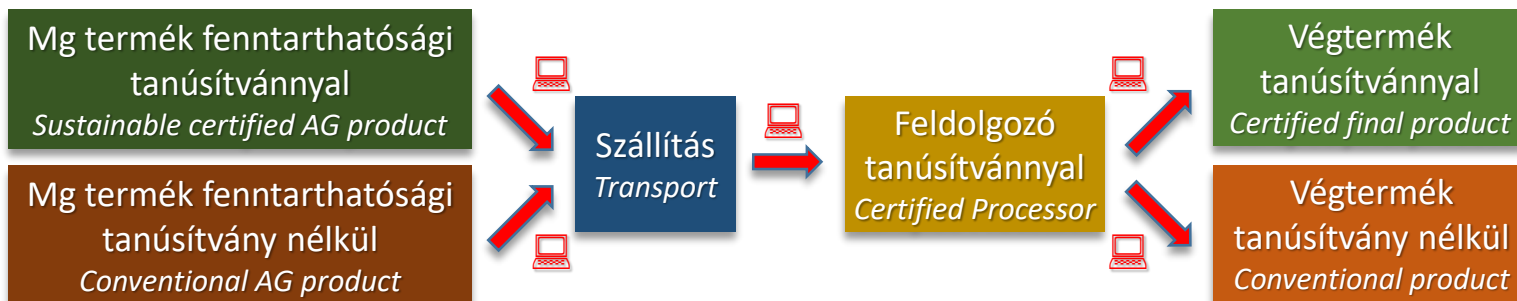
Fenntarthatóság nyomon követése

Sustainability tracing models

Szegregáció *Segregation*



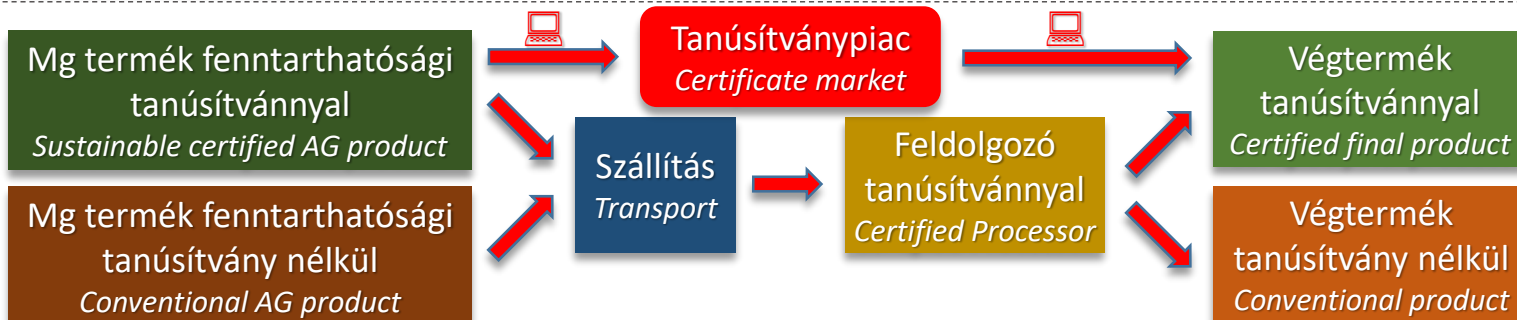
Tömegmérleg *Mass Balance*



IP rendszer *Identity Preserved*



Book & Claim



Success factors

Identification of market demand and development of markets

Stable contract relations

Information systems

Dedicated infrastructure



Main factors of failure

Underestimation of the amount of time, money and effort required to develop markets and to maintain effective relationships

Factors weakening contract relations

Consumers' unwillingness to pay premiums

Az elsődleges mozgatórugó a kiskereskedelem

The main driver is the retail sector

Diszkontlánc
Discount retail chain



'B' márka
Private label



Többletköltségek nem a
fogyasztóra terhelődnek
*No additional costs
transferred to consumers*



GMO-mentesség
GM-free

Környezeti
fenntarthatóság
*Environmental
sustainability*

Állatjólét
*Animal
welfare*



Termelői kiadások
Producer expenditures

Vállalati imázs
Company image

**IF YOU CAN'T
BEAT THEM,
JOIN THEM.**



Köszönöm a figyelmet!

Thank you for you attention!